

Decrease of the Black Kite *Milvus migrans* and other commensal birds in the Comoros

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Man colonized the Comoros some 1000 years ago. His activities changed the vegetation in the lowlands drastically, permitting subsequent colonization by several culture-following bird species from Madagascar and Africa. The inter-island distances (minimum 45 km) prevent frequent exchange of birds; since the composition of the avifaunas are quite similar, however, this must have occurred at times.

Man also introduced some other birds deliberately. The dates of these introductions are not all well known though Benson (1960) and Louette (1988) give some estimates. Several introduced birds had already died out around the turn of the century, including Common Waxbill *Estrilda astrild*, Red Avadavat *Amandava amandava*, Java Sparrow *Padda oryzivora* and Pin-tailed Whydah *Vidua macroura*. The House Sparrow *Passer domesticus* is still limited to the urbanized parts of Grand Comoro and Mayotte, where it has progressed slowly over the years since Benson's 1958 visit. In Moheli it also exists in native villages, possibly not permanently; none were seen at Miringoni in 1975 (Cheke & Diamond 1986), 1989 or 1992, whereas it was quite common there in 1983. On Anjouan its introduction failed. The Grey-headed Lovebird *Agapornis cana* is a regular but not uncommon species in the lowlands of all four islands, perhaps commonest in Mayotte. Its status does not seem to have changed since 1958. The fate of the Helmeted Guineafowl *Numida meleagris* is related to hunting. It persists only in a few scattered patches on three islands and is absent from Moheli.

Two introduced species were highly successful. The Common Myna *Acridotheres tristis* was introduced about 1903 (Benson 1960) and is now widespread and very common all over the archipelago, except in pristine forest on the summit of Moheli and above 1000 m in general on Grand Comoro. The Madagascar Fody *Foudia madagascariensis*, which possibly arrived unaided by man (first mentioned by Sclater 1864), is now present over large areas of the archipelago. It is less abundant at higher altitudes and, oddly enough, is absent in the interior of Mayotte.

The first author to mention a commensal self-introduced bird was Peter Mundy who saw the Pied Crow *Corvus albus* on Moheli in 1628 (Temple 1914); Schlegel & Pollen (1868) and Nicoll (1906) mention that it was very common on Mayotte. Benson (1960) described it as common throughout the archipelago. It is surprising that this highly successful species has recently been declining. On Mayotte I found it regular and quite common in October 1983 and April 1985; in October 1992 only five birds were seen during 30 h of bird-counts in forest and a similar number of birds during 15 h in degraded vegetation. It was also uncommon on Anjouan one week later, where R. Miallier was also surprised by its rarity. It diminished significantly on Grand Comoro between 1985 and 1989-(Stevens *et al.* 1992). In the absence of counts, I cannot confirm my impression that the same tendency also prevails for Cattle Egret *Bubulcus ibis* and possibly for Bronze Mannikin *Lonchura cucullata* (not really a commensal bird on the Comoros). Both species are more common on Anjouan and Moheli where agricultural activity is greater than on the other two islands.

The Black Kite decrease

The most spectacular and rather well-documented case concerns the Black Kite. The local race is *parasitus*, normally a bird well adapted as a commensal (cf. Manyanza 1984). In August–November 1958, Benson (1960) found it “a familiar sight in the neighbourhood of human habitations throughout the archipelago”. Forbes-Watson (1969) considered it common on all four islands in October 1965, as did Salvan (1972) on Grand Comoro and Mayotte in December 1969 and October 1970. D. A. Turner and A. D. Forbes-Watson again saw it on all four islands in June–July 1974. For Grand Comoro, this consisted of the observation of a “few individuals only” on 15–16 June. M. Toyb told me in 1989 that on Grand Comoro “20 years ago, during my childhood, it was common around villages, but disappeared later, due to a change in slaughtering practises”. By July–August 1981, the bird had indeed disappeared from Grand Comoro, as it was not seen by M. Herremans and me then, nor during five subsequent visits (September–December 1983: ML, MH and L. Janssens; April 1985: ML and MH; September–October 1985: J. Stevens, L. Bijnens and LJ; November–December 1989: ML, MH, JS, D. Meirte and D. Vangeluwe; September–October 1992: DM). There are no records by any other observer for Grand Comoro from 1991 onwards.

On Mayotte, from April to July 1864, it existed “en quantité dans le port de Zauzi” (Schlegel & Pollen 1868). The species was still very numerous there in February 1906 (Nicoll 1909). In 1983, during a visit of ten days in October–November, I explored the whole islands of Grande Terre and Pamandzi and did not see the species at all. In April 1985, however, small numbers were seen: up to four together daily on Grande Terre and one at Pamandzi. More recently, between May and October 1992 only two (the same bird?) were seen by F. Néri at Mamoudzou town and Bouzi islet. M. Le Corre saw one only during a fortnight’s stay, in July 1992 at Bandrélé and I saw none during two weeks in October of the same year.

For Anjouan, Sclater (1864) mentions Kirk’s observation that the species was “in great abundance” at Pomoni in August, while Newton (1877) found it “very common”. During a stay of eight days in October 1983, M. Herremans and L. Janssens saw a single bird at Ouani airport and two more near Adda-Doueni, two near Pomoni and twice a bird near Lingoni. One bird was seen at the airport during a stopover on 25 April 1985 by M. Herremans and me. In the period 1985–1988, J. Veerkamp regularly saw one bird at Ouani airport and more rarely one at Mutsamudu. Safford & Evans (1992) saw one at Mutsamudu in April 1990. R. Miallier saw none in 1992 during his stay at Pomoni in the period March–July nor did I during five days in November 1992.

On Moheli, where Benson (1960) saw groups of 17, 13 and ten on the single day of 18 September 1958, Cheke & Diamond (1986) saw “rather few” in February 1975. It was quite regular everywhere on the island in November 1983. Up to four birds together were seen at Fomboni, and it occurred in fair numbers at the south coast (Miringoni and Moihani) and inland up to the ridge. It was also seen on the islets Canzoni and Magnogni. In December 1989 a single bird was seen twice at the ridge during a two-day stay and one more at sea level during a two-day stay there. In November 1992, during a four-day stay, D. Meirte did not see the species.

In conclusion, the Black Kite had already disappeared from one island by 1981 and became very rare on the three others during the 1980s, bringing it also to the verge of extinction there by 1992.

Possible causes of the decline

The species' former status in the Comoros is uncertain; was the Black Kite resident (and breeding) or migratory?

One hypothesis is that the bird was resident, and unable to reverse a population decline. Up to the 1970s it was apparently present year-round on the Comoros, and the decline appears to have been steady. However, no sign of breeding has ever been mentioned on the Comoros or on nearby Aldabra, whence there are single observations and specimens in the months August–January, and one from March (Benson & Penny 1971). It is also a stray at the Glorieuses (Benson *et al.* 1975), indicating its ability to venture into the Moçambique Channel.

A second possibility is that the bird was a non-breeding migrant, some external factor having changed the numbers involved. The fact that it disappeared completely from Grand Comoro years ago, while it was still present but decreasing on the other islands, may favour this hypothesis. Grand Comoro is the island farthest away from Madagascar, possibly not reached any longer by the ever-decreasing number of birds travelling from there. Also, if the species was absent from Mayotte in 1983 and present again in 1985, these latter birds must have been newly arrived migrants.

Indeed, the status on the Comoros is conceivably related to its population in Madagascar and the reason for decline may be due to a decrease there, with subsequent absence of expansionary migration to the Comoro archipelago. Langrand (1990) mentions the Black Kite as a common gregarious species in Madagascar, proven to breed "in loose-knit colonies". He gives September as the breeding period and both Rand (1936) and Meyburg & Langrand (1985) mention nests in October. However, they do not describe any migrations, other than indicating the usual aggregations in flocks. Since most of our visits to the Comoros have been during this Madagascar breeding period, it is not impossible that migrants reached the archipelago during the off-season. However, some observers were also present then, and previous observers also saw the bird during September–October making this hypothesis unlikely, although Benson (1960) thought the large groups he saw on Moheli were migrants.

Alternately, the Comoro birds may have been of African descent; no morphological difference is known between African, Madagascar and Comoro specimens. The breeding period is the same as in Madagascar for the part of the continent closest to the Comoros (Benson & Benson 1977, Britton 1980). The species is a dry season breeder, leaving the region during the rains; it is not known to have decreased in eastern Africa recently (to the contrary: Lewis & Pomeroy 1989) or changed its migration patterns. There is no example known of a migrant bird breeding in Africa and reaching the Comoros, whereas there are several that make a post-breeding migration there from Madagascar. On the opposite side of Africa, de Naurois (1983) noted that the Black Kite is a non-breeding dry-season visitor to the island of Fernando Poo, which may be too wet for breeding as are the neighbouring parts of Cameroon and Nigeria. On São Tomé and Príncipe it is a common bird, proven to breed, although it colonized Príncipe only between 1949 and 1954 (and existed *c.* 1866?); on Annobon it is a stray.

Discussion

In any case, the steady decrease over a long period by several unrelated species on the four Comoro islands seems to rule out change in migratory behaviour as a possible

cause. It also makes disease, hunting or other direct human interference unlikely explanations. One wonders if the supposed abandonment of slaughtering in the open or a general more enforced hygiene would be detrimental for the crow and the kite. The vegetation on the islands is ever more degraded, except perhaps on Mayotte where agriculture is decreasing. Given the preference that these birds have for regions with seasonal dry periods, we should investigate whether the climate may have undergone some critical changes, possibly with a series of abnormal wet years in a row. Rainfall data are available from 1951 to 1974 on a yearly basis but, unfortunately, only erratically for subsequent years (J. B. Ergo, pers. comm.). Examining the data available, at both stations (Pamandzi, on Mayotte and Moroni, on Grand Comoro), no such increase is apparent, either on a yearly basis or in the possibly critical months of the breeding season. In any case, the yearly mean of rainfall at Pamandzi (c. 1260 mm) would not seem to be excessive, although in most parts of the archipelago it is much higher. This possibly makes breeding there impossible for these species, and leaves only restricted parts as suitable.

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